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and
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FORKED TONGUE, SPLIT BRAIN, AND AMBIGUOUS DIALOGUE*



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ABSTRACT

Such an unlikely triad as Indian scouts of the Old West, brain researchers on right- and left-hemispheres, and humorists help human factors researchers understand why ambiguous expressions continue. Engineers who wish to sharpen their writing skills can learn from cartoons that deliberately use ambiguity as their source of humor. A simple test for recognizing ambiguity is included.

INTRODUCTION

Though intrigued by the rapid development in electronics technology, editors are cautious when they read in new documentation the same flaws in usage that confused messages in the past. Ambiguous statements, those susceptible to more than one interpretation, often cause the confusion. Whether in written reports or oral explanation, ambiguity hinders the clear exchange of ideas.

Semantics and linguistics are the expected disciplines for exploring the meanings of words, but human factors engineers also turn to history for examples of how the structure of a language influences its written form, and hence, how it is understood. When two languages do not transfer to each other an equivalent message, syntax as much as vocabularies are failing to communicate.

Similarly, when ambiguity occurs within a language, neural patterns within the brain hemispheres are failing to communicate. With two different languages or within the same language, similar cognitive processes and linguistic skills apply. Thus, to gain another insight on ambiguity, we call together the unlikely triad: an example from history of the Old West, a thought on cognitive development, and a sample of a cartoonist's skill.

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FORKED-TONGUE WARNINGS

Disparate Languages. Forked tongue first described language that could be understood in more than one way. This ambiguity was considered a desirable quality because it was interpreted as mystical. Later forked tongue came to mean betrayal through acting differently from what was promised. English and the American Indian languages were so different in construction and in method of expressing meaning that ambiguity was built into most exchanges. History records that broken treaties and treachery stemmed not only from perfidy, but also from disparate language.

For example, the Algonquian shaman, who interpreted symbols while preparing his medicines, spoke a polysynthetic language in which many elements combine into one phrase and do not exist separately. His holistic expressions parallel a right-brain approach. He was the only person empowered to interpret symbols, which were thought to hold infinite, and not definite, meaning. For centuries, the shaman had viewed graphic symbols as occult. This same belief is found in most languages. When the root of the English word grammar is traced to Greek, there is yet an earlier root that means magic. What could be more magical to the illiterate on either continent than watching someone look at little marks on bark or paper to invoke the mind of someone who was far away, or who was dead!

Graphic vs. Alphameric Structure. Across the continent, all native languages from Ojibway to Aleut followed graphic structure, expressing action without specific time or space indicators. The language of a cavalry scout was alphameric instead of pictorial, thereby making precise communication between them difficult. The scout parallels a left-brain language, so analytical and conscious of word position that every action simultaneously expresses the time it occurs and whether more than one person acts. Such differences in linguistic orientation resulted in frequent misunderstanding, as the following treaty illustrates.

Broken Treaty. An early Siouan-U.S. treaty read: "Natowessiwak Youlhi River crossing never all moons hard water." Each side kept the treaty they believed the other broke. The native people meant they would cross the Youlhi River boundary only during wintertimes when the water froze. The cavalry captain forwarded to Washington his interpretation that the Siouan people had promised never to cross the river.

Even the inexact Apache speech in movies of the 30's, such as, "Him heap big warrior" or "Many snows teepee pass," records a holophrastic syntax being awkwardly imposed on a grammar that expresses meaning by the position of separate words rather than by inflections.

AMBIGUITY IN ENGLISH

Confusing Vocabulary. Some ambiguity arises from word placement. Other ambiguity arises from multiple definitions of words. English with its largest vocabulary among world languages still has numerous definitions for many words. English speakers pause before a written statement like "Visiting relatives can be a bore." If repeated in a neutral context, this sentence will be interpreted by half the readers as if the relatives are visiting, and by the others as if the relatives are being visited (Ref. 1).

Context. Intonation and gestures bolster a speaker's meaning, but a writer is limited to the words on a page, lifeless unless they come alive in the reader's mind as ideas or, better still, as images. Therefore, stating the context eliminates in advance the possibility of alternative interpretation, even from secondary stimuli. If one person has just seen a swimming suit and another a billiard cue, each will interpret the word pool differently. Unless context is set first, ship flounders will mean something quite different to a fish store proprietor than to a sailor; a barn, to a farmer than to a physicist.

Context sets the framework of reference and briefly allows the writer to influence the reader's short-term memory. Thus, if our earlier context had implied that the writer doesn't like to have relatives come to visit, then most persons would interpret the ambiguous sentence in the context of an unwilling host. On the other hand, if context had implied that the writer doesn't like to visit relatives, readers would see an unwilling visitor. It is the network inside the mind, and not only the words or the word order that influences interpretation. Setting the context, however, leaves one puzzle unsolved: Not all receivers will interpret a statement according to the bias intended even though a context is supplied.

Confusing Syntax. Some ambiguities can be traced to faulty syntax, such as misuse of adjectives and adverbs. For example, an Asian engineer stood soaking wet in his friend's hallway, insisting it was hardly raining! When asked how he got so wet, he replied, It's as I just said--It's raining hard (Ref. 2).

Other ambiguities are anomalies in linguistic logic that are explained as idiom and not as omission of context. To illustrate, a sign barricaded the door of an out-of-service elevator in a European hotel: "We apologize. Until repairs are made you will be unbearable."

RIGHT-LEFT BRAIN INSIGHTS.

Cognition. Engineers can apply recent developments in cognitive development that explain right- and left-hemisphere brain processes to identify ambiguous phrasing. Because most engineers report new information, the contextual bias often follows rather than precedes, leaving context-less statements ambiguous. Especially writing with a belated context will be improved by figures, photographs, and diagrams. Illustrations create an instant context for the reader because "it is difficult to take notes on something one does not know about, and cannot have knowledge of until reading has been completed (Ref. 3).

Anticipating interpretation. We can anticipate how various persons will interpret an ambiguous statement when we recognize whether their cognitive tendencies are right- or left-hemisphere dominated. Logical details come from the left hemisphere of the brain; relationships come from the right. Constructing language draws from the left hemisphere, interpreting meaning draws from the right. Knowing multiple definitions for one word draws from the left; but forming a connotation of subtleties draws on the right. Persons with good interaction between both hemispheres smile at the old example: "My girl is a vision and yours is a sight."

As another example, some U.S. motorists in Canada obey the law and others find themselves with parking tickets for leaving their cars in space identified "Fine to park."

Writers seldom recognize their own ambiguous phrases because contextual bias overrides interpretation. Ambiguous examples from engineering writing seldom help engineers because few can refrain from considering the engineering problem and not the syntactical one. One engineer denied any difference between a single particle element and a single-particle element until faced with a light housekeeper and a lighthouse keeper and a light house keeper.

AMBIGUITY IS LAUGHABLE

Ambiguity is basic to humor. I use cartoons and newspaper gaffes in technical writing classes to help engineers recognize ambiguity. Cartoons lighten the task by infusing levity. But this method carries a risk as E. B. White cautioned in Elements of Style that analyzing humor is like dissecting a frog. It is fatal to the subject and the remains are of interest only to a pure scientist. Notwithstanding, those who can explain why a cartoon is ambiguous avoid making the same mistake.

Types of Ambiguity. Among the many types of ambiguity are five which are found frequently in technical writing.

1. Ambiguous by Zeugma

Zeugma stems from a Greek word meaning joining. It is a rhetorical figure in which a word modifies or governs two or more words, although it grammatically or logically is correct only with one.

For example: "He left in high spirits and his new Porsche,"
or "We accepted the proposal and the consequences."



2. Ambiguous by Infinitive. Infinitives are interpreted by readers as intentional, that is, they are interpreted for the purpose of, as, "They calibrated the responses to determine a baseline." Therefore, the following sentence is ambiguous:

"He returned to the lab to find books strewn on the floor." (Was this his purpose?)

3. Ambiguous by Misplaced Antecedent. Pronouns must refer to a written antecedent. (One in the writer's head doesn't count.)



4. Ambiguous by Modifiers. Unnecessary adjectives confuse meaning (Ref. 4).
"Naturally the family doesn't want any unnecessary scandal." (How much scandal would be necessary?) "They were criticized for unduly disturbing the concert." (Would a shorter disturbance be acceptable?) "It was so toxic that only a small amount was fatal." (Would a large amount be safe to drink?)

5. Ambiguous by Homonyms. The same words with different meanings are ambiguous if the context has not been established.



Test Your Ability. Here's a quick test of your ability to see more than one possible interpretation in sentences taken from recent newspaper stories. If you recognize alternatives quickly, your right- and left-brain hemispheres are working well together, and you won't need the clues in parentheses.

The sheriff wouldn't stop cruising.

(His own? or the teenagers'?)

In the children's theater, the wizard made the girl a goose.

(Into a goose, or a goose for the girl?)

Because you contributed they are living with leukemia.

(Would they be healthier if we were less generous?)

The narcotics agent shot the man with a gun.

(Did they both have guns?)

The license, which could be issued this week, would allow the plant to operate above 5 percent of its capacity for the first time in its two-decade history.

(Will it operate at 6% or 106%?)

A protective barrier which will contain burst fragments must be erected around the unit.

(Where can you buy burst fragments to put in barriers?)

If it took more than an instant to see a second interpretation, your homework is to read more funny papers. Their humor usually rests upon some form of ambiguity. Your rhetorical skills will improve painlessly along with your sense of humor.

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REFERENCES

- (1) J. A. Fodor, et al., The Psychology of Language, New York: McGraw-Hill, 1974
- (2) O. L. Eliason, "Speak a Foreign Language," Language Paper, vol. 1, p. 4, Walnut Creek, CA: Language Agency, March-April 1985.
- (3) T. Buzan, Use Both Sides of Your Brain, New York: E. P. Dutton, 1976
- (4) J. Barzun, Simple & Direct, New York: Harper & Row, 1975